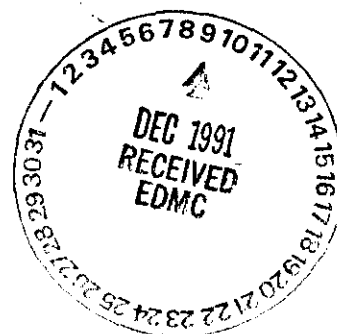


## TEST REQUEST FORM

Sample/Specimen No. 9-058 Cost Code/Work Order No. ED 332Requested By: Org. 80232 Person J. LINDBERG Date 11-29-89

Test Requested	No. of Samples	Test Lab Information (Instruction Used)
<u>MOISTURE</u>	<u>1</u>	<u>ETAL-14</u>
<u>SIEVE ANALYSIS</u>	<u>1</u>	<u>ETAL-07</u>
<u>HYDROMETER</u>	<u>1</u>	<u>ETAL-07 (AS REQUIRED)</u>
<u>N/A</u>	<u>N/A</u>	<u>N/A</u>

Remarks SAMPLE (FIELD)  
MW-4-1Received By: R.G. ALEXANDER Date 11-28-89Approved By: R.G. ALEXANDER Date 11-29-89

# SIEVE ANALYSIS DATA SHEET

Sample ID 9-058

Page 1 of 1

Tested By R.G. ALEXANDER

Date 11-29-89

Procedure ETAL-07

Rev 0

Date Issued 11-15-89

EQUIPMENT ITEM	CALIBRATION NO.	DATE DUE
Balance	<u>3304</u>	<u>12-28-89</u>
Thermometer	<u>0006</u>	<u>2-6-90</u>
<u>N/A</u>	<u>N/A</u>	<u>N/A</u>

Sample Description SANDY GRAVEL

Sieve Time 10 (min)

reduced by ☒ splitting

☒ quartering

☐ stockpile

(B) BEFORE TEST WT. N/A (A) AFTER TEST WT. N/A  $\frac{B-A}{B} \times 100 = \underline{N/A} \% \text{ LOSS}$

Sieve ID Number	Sieve Size	Sample Weight	Cumulative Wt. Retained (g)	% Retained	Cumulative % Retained	Cumulative % Pass	% Pass
<u>N/A</u>	<u>1 1/2</u>	<u>5296.91</u>	<u>279.17</u>	<u>5.3</u>	<u>5.3</u>	<u>94.7</u>	<u>94.7</u>
	<u>1</u>		<u>688.22</u>	<u>13.0</u>	<u>13.0</u>	<u>87.0</u>	<u>87.0</u>
	<u>3/4</u>		<u>924.62</u>	<u>17.5</u>	<u>17.5</u>	<u>82.5</u>	<u>82.5</u>
	<u>1/2</u>		<u>1275.90</u>	<u>24.1</u>	<u>24.1</u>	<u>75.9</u>	<u>75.9</u>
	<u>3/8</u>		<u>1441.70</u>	<u>27.2</u>	<u>27.2</u>	<u>72.8</u>	<u>72.8</u>
	<u>#4</u>		<u>1695.01</u>	<u>32.0</u>	<u>32.0</u>	<u>68.0</u>	<u>68.0</u>
	<u>#10</u>	<u>5296.91</u>	<u>2526.63</u>	<u>47.7</u>	<u>47.7</u>	<u>52.3</u>	<u>52.3</u>
	<u>#40</u>	<u>136.22</u>	<u>72.61</u>	<u>53.3</u>	<u>53.3</u>	<u>46.7</u>	<u>24.4</u>
	<u>#60</u>		<u>89.36</u>	<u>65.6</u>	<u>65.6</u>	<u>34.4</u>	<u>18.0</u>
	<u>#100</u>		<u>105.43</u>	<u>77.4</u>	<u>77.4</u>	<u>22.6</u>	<u>11.8</u>
	<u>#200</u>		<u>118.47</u>	<u>87.0</u>	<u>87.0</u>	<u>13.0</u>	<u>6.8</u>
<u>N/A</u>	<u>PAN</u>	<u>136.22</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>

Finess Modules (FM) N/A (See ASTM C 136-83, Section 8.2)

## MATERIALS FINER THAN NO. 200 SIEVE BY WASHING

C=Percentage of Material Passing a 200 Sieve N/A %

D=Original Dry Weight of Sample N/A g

E=Dry Weight of Sample After Drying N/A g

$C = \frac{D-E}{D} \times 100$

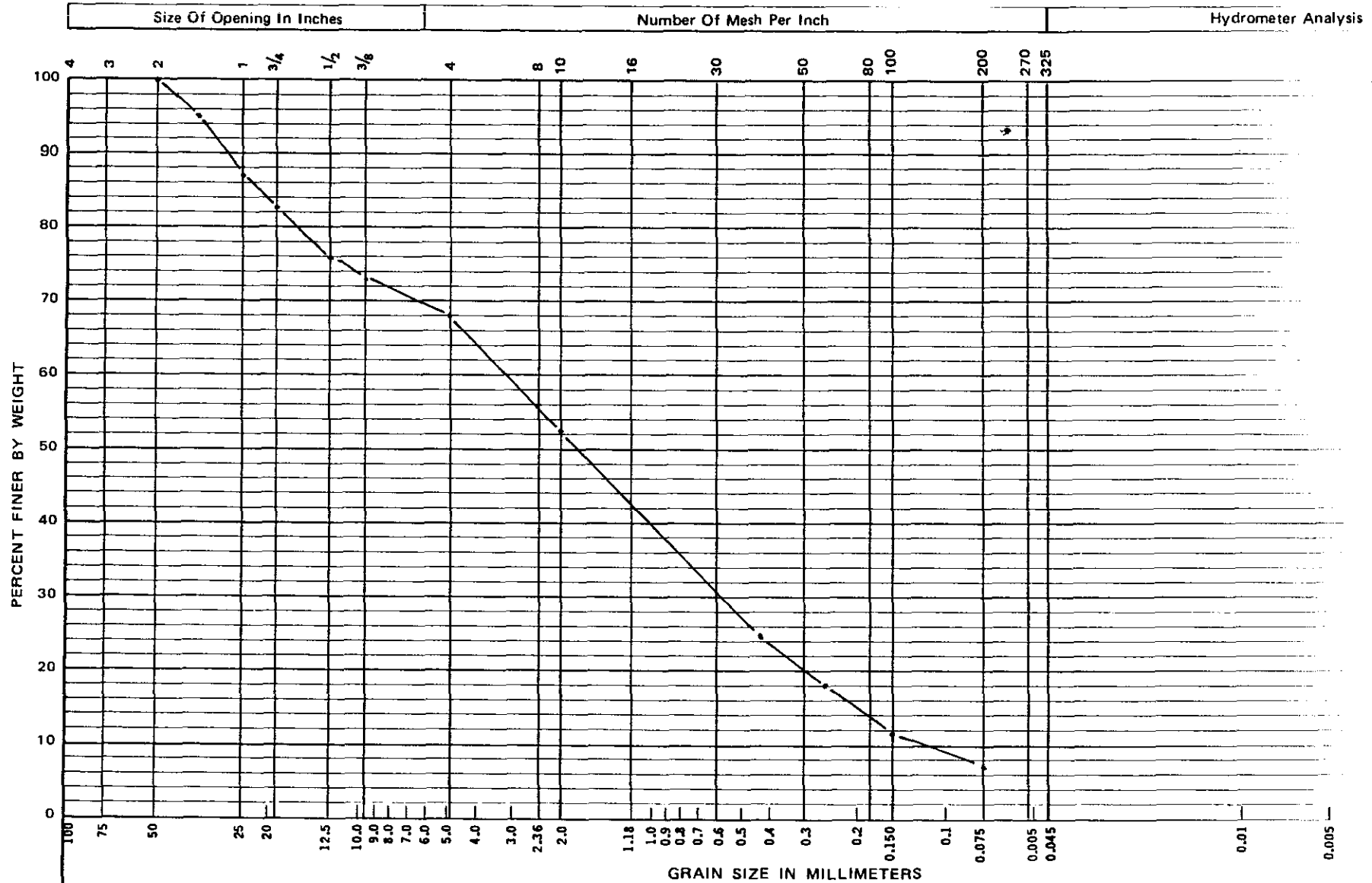
## Remarks

WASH FINE GRADING

ALL DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS TRAINED AND USED CALIBRATED INSTRUMENTS

Checked By C.J. Kemp Date 12-5-89

# GRAIN SIZE ANALYSIS PLOT



Specimen No. 9-058

Procedure No. ETAL-07

Rev. 0

Date Issued 11-15-89

Sample Description:

SANDY GRAVEL  
MW-4-1

Plotted by: R.G. ALEXANDER

Date: 11-30-89

Checked by: C.J. King

Date: 12-5-89

# SOIL MOISTURE DATA SHEET

PROCEDURE NO. ETAL-14

REV. NO. 8THERMOMETER NO. 0006

CALIBRATION DUE DATE 2-6-90

[illegible]

ALL REQUIRED DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS APPROPRIATELY TRAINED AND TEST PROCEDURES FOLLOWED TO PRODUCE THE ABOVE DATA

TEST OPERATOR: R.G. ALEXANDER

DATE *4-30-89*



Westinghouse  
Hanford Company

# CHAIN OF CUSTODY

Company Contact: JW Lindberg Telephone 6-5005

Sample Collected by: Lindberg/Consort/Miller Date: 11/9/89-11/20/89 Time: Variable

Sample Locations: MW-4 1100-EM-1 CERCLA

Ice Chest No.: N/A Field Logbook & Page No.: pages 1-6 WHC-N-306-3

Remarks: Sample MW-4-4 already sent for quick-turn-around sieve analysis for filter pack and well screen selection

Bill of Lading No.: N/A Off Site Property No.: N/A

Method of Shipment: Hand carry

Shipped to: Jerry Alexander, 2101-M Bldg, Physical Testing Lab

## Sample Identification

<u>MW-4-1 plastic bags</u>	
<u>MW-4-2 plastic bags</u>	
<u>MW-4-3 plastic bags</u>	
<u>MW-4-5 plastic bags</u>	
<u>MW-4-6 plastic bags</u>	
<u>MW-4-7 plastic bags</u>	

## CHAIN OF POSSESSION

Relinquished by: JW Lindberg

Received by: R.G. Alexander

Date/Time: 11/28/89 3:30

Relinquished by: \_\_\_\_\_

Received by: \_\_\_\_\_

Date/Time: \_\_\_\_\_

Relinquished by: \_\_\_\_\_

Received by: \_\_\_\_\_

Date/Time: \_\_\_\_\_

Relinquished by: \_\_\_\_\_

Received by: \_\_\_\_\_

Date/Time: \_\_\_\_\_

# SAMPLING ANALYSIS REQUEST

## Part I: Field Section

Collector Lindberg/Consort/Miller Date Sampled 11-9-89 Time Variable hours  
 Affiliation of Sampler WTC and Golder

Address \_\_\_\_\_  
 number street city state zip

Telephone ( ) 6-5005 Company Contact JW Lindberg

LABORATORY SAMPLE NUMBER	COLLECTOR'S SAMPLE NO.	TYPE OF SAMPLE*	FIELD INFORMATION**
	<u>MW-4-1</u>	<u>plastic bag</u>	<u>moisture and Sieve/Hydrom</u>
	<u>MW-4-2</u>	<u>" "</u>	<u>" " " "</u>
	<u>MW-4-3</u>	<u>" "</u>	<u>" " " "</u>
	<u>MW-4-5</u>	<u>" "</u>	<u>Sieve/Hydrom Anal</u>

Analysis Requested Moisture Content, Sieve/Hydrometer Analysis as  
indicated in Field Info\*\* above right.

Special Handling and/or Storage \_\_\_\_\_

## PART II: LABORATORY SECTION\*\*

Received by R.G. Alexander Title ADV ENG Date 11-28-89

Analysis Required \_\_\_\_\_

\* Indicate whether sample is soil, sludge, etc.

\*\*Use back of page for additional information relative to sample location.

Figure 9-19. Example of hazardous waste sample analysis sheet.

# RADIATION RELEASE

Bldg. 1100 Area Date 11-09-89  
 Released By H.A. Bessell  
 Operational Health Physics  
 Remarks MW-4-1

54-3000-022 (09/88)

# RADIATION RELEASE

Bldg. 1100 Area Date 11-10-89  
 Released By J.M. Shumaker  
 Operational Health Physics  
 Remarks < D 1 sample

54-3000-022 (09/88)

# RADIATION RELEASE

BLDG. 1100-Area DATE 11-15-89  
 RELEASED BY R. Buzan  
 RADIATION MONITORING  
 REMARKS: MW-4-3

54-3000-022 (6-87)

# RADIATION RELEASE

Bldg. MW-4 drilling site Date 11-21-89  
 Released By Rich Bumgarner  
 Operational Health Physics  
 Remarks < Than Detectable  
Sample sent to the lab 11-20-89 MW-4  
Results OK

54-3000-022 (09/88)

# RADIATION RELEASE

Bldg. MW-4 drilling site Date 11-21-89  
 Released By Rich Bumgarner  
 Operational Health Physics  
 Remarks < Than detectable - sample (11-20)  
set to 100K lab. results OK

54-3000-022 (09/88)

# RADIATION RELEASE

BLDG. MW-6 DATE 11/17/89  
 RELEASED BY B. Buzan  
 RADIATION MONITORING  
 REMARKS: MW-6-1

54-3000-022 (5-87)

# RADIATION RELEASE

BLDG. MW-6 DATE 11/14/89  
 RELEASED BY B. Buzan  
 RADIATION MONITORING  
 REMARKS: MW-6-2

54-3000-022 (5-87)

# RADIATION RELEASE

Bldg. MW-6 drilling site Date 11-21-89  
 Released By C.D. Fulmyles  
 Operational Health Physics  
 Remarks < detectable sample # MW-6-4  
(Two) MW-6-5 (+) MW-6-4A

54-3000-022 (09/88)

# RADIATION RELEASE

Bldg. MW-6 drilling site Date 11-21-89  
 Released By C.D. Fulmyles  
 Operational Health Physics  
 Remarks < Detectable on sample #  
MW-6-4

54-3000-022 (09/88)

# TEST REQUEST FORM

Sample/Specimen No. 9-059 Cost Code/Work Order No. ED 332

Requested By: Org. 80232 Person J. LINDBERG Date 11-29-89

Test Requested	No. of Samples	Test Lab Information (Instruction Used)
<u>MOISTURE</u>	<u>1</u>	<u>ETAL-14</u>
<u>SEIVE ANALYSIS</u>	<u>1</u>	<u>ETAL-07</u>
<u>HYDROMETER</u>	<u>1</u>	<u>ETAL-07 (AS REQUIRED)</u>
<u>N/A</u>	<u>N/A</u>	<u>N/A</u>

Remarks FIELD SAMPLE  
MW-4-2

Received By: R.G. ALEXANDER Date 11-28-89

Approved By: R.G. ALEXANDER Date 11-29-89

# SIEVE ANALYSIS DATA SHEET

Sample ID 9-059

Page 1 of 1

Tested By R.G. ALEXANDER

Date 11-30-89

Procedure ETAL-07

Rev 0

Date Issued 11-15-89

EQUIPMENT ITEM

CALIBRATION NO.

DATE DUE

Balance

3304

12-28-89

Thermometer

0006

2-6-90

N/A

N/A

N/A

Sample Description SANDY GRAVEL

Sieve Time 10 (min)

reduced by ☒ splitting

☒ quartering

☐ stockpile

(B)

(A)

BEFORE TEST WT. N/A AFTER TEST WT. N/A  $\frac{B-A}{B} \times 100 = \underline{N/A} \% \text{ LOSS}$

Sieve ID Number	Sieve Size	Sample Weight	Cumulative Wt. Retained (g)	% Retained	Cumulative % Retained	Cumulative % Pass	% Pass
<u>N/A</u>	<u>1 1/2</u>	<u>5453.63</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>100</u>	<u>100</u>
	<u>1</u>		<u>284.55</u>	<u>5.2</u>	<u>5.2</u>	<u>94.8</u>	<u>94.8</u>
	<u>3/4</u>		<u>510.75</u>	<u>9.4</u>	<u>9.4</u>	<u>90.6</u>	<u>90.6</u>
	<u>1/2</u>		<u>1050.80</u>	<u>19.3</u>	<u>19.3</u>	<u>80.7</u>	<u>80.7</u>
	<u>3/8</u>		<u>1462.61</u>	<u>26.8</u>	<u>26.8</u>	<u>73.2</u>	<u>73.2</u>
	<u>#4</u>		<u>1918.28</u>	<u>35.2</u>	<u>35.2</u>	<u>64.8</u>	<u>64.8</u>
	<u>#10</u>	<u>5453.63</u>	<u>2194.19</u>	<u>40.2</u>	<u>40.2</u>	<u>59.8</u>	<u>59.8</u>
	<u>#40</u>	<u>121.74</u>	<u>79.28</u>	<u>65.1</u>	<u>65.1</u>	<u>34.9</u>	<u>20.9</u>
	<u>#60</u>		<u>95.22</u>	<u>78.2</u>	<u>78.2</u>	<u>21.8</u>	<u>13.0</u>
	<u>#100</u>		<u>103.60</u>	<u>85.1</u>	<u>85.1</u>	<u>14.9</u>	<u>8.9</u>
	<u>#200</u>		<u>109.98</u>	<u>90.3</u>	<u>90.3</u>	<u>9.7</u>	<u>5.8</u>
<u>N/A</u>	<u>PAN</u>	<u>121.74</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>

Finess Modules (FM) N/A (See ASTM C 136-83, Section 8.2)

## MATERIALS FINER THAN NO. 200 SIEVE BY WASHING

C=Percentage of Material Passing a 200 Sieve N/A%

D=Original Dry Weight of Sample N/A g

E=Dry Weight of Sample After Drying N/A g

$C = \frac{D-E}{D} \times 100$

Remarks

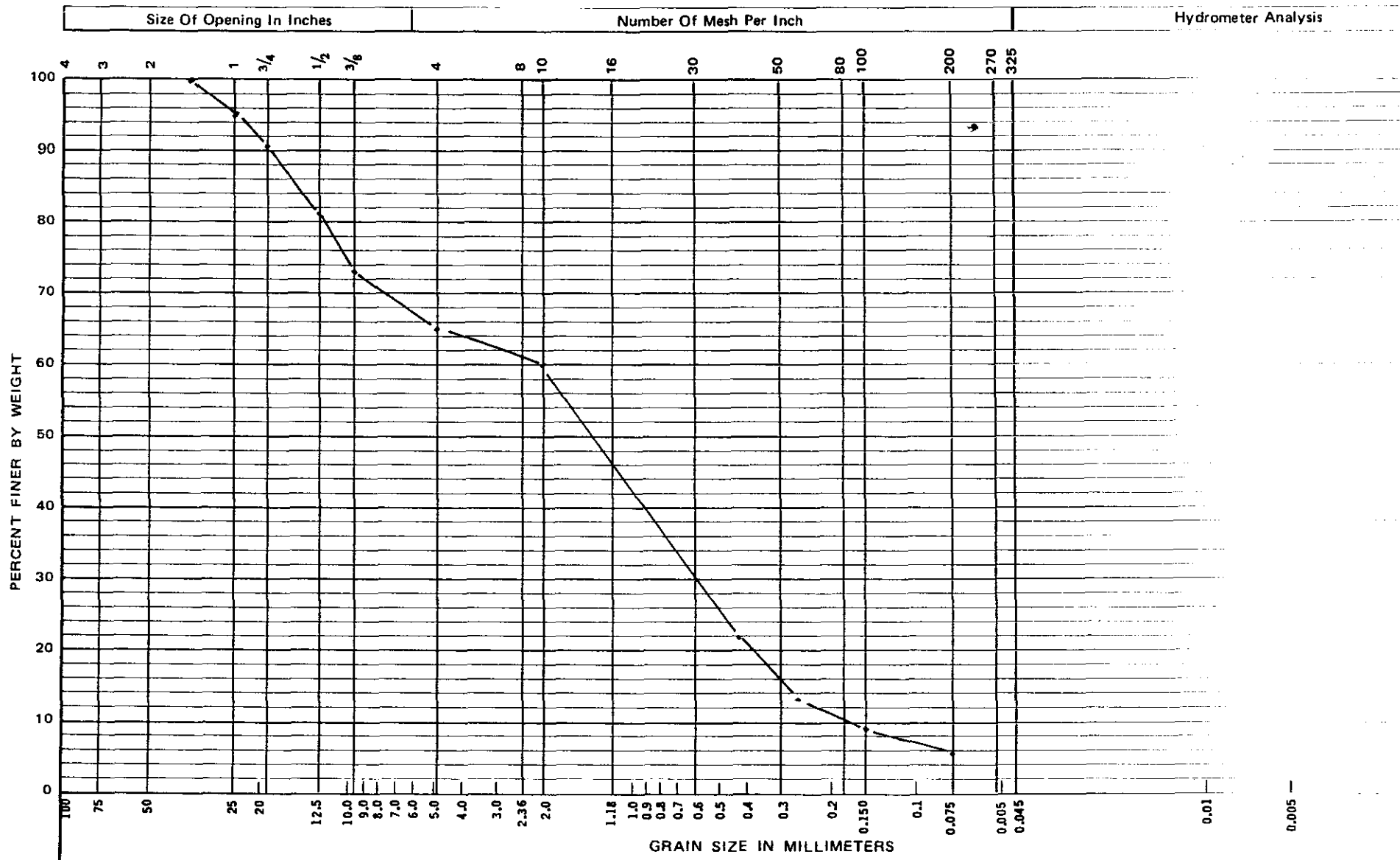
WASH FINE GRADING

ALL DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS TRAINED AND USED CALIBRATED INSTRUMENTS

Checked By C. J. King

Date 12-5-89

# GRAIN SIZE ANALYSIS PLOT



Specimen No. 9-059

Procedure No. ETAL-07

Rev. 0

Date Issued 11-15-89

Sample Description:

SANDY GRAVEL  
MW 4-2

Plotted by: R.G. ALEXANDER

Date: 11-30-89

Checked by: C.J. Kemp

Date: 12-5-89

# SOIL MOISTURE DATA SHEET

PROCEDURE NO. ETAL-14

REV. NO. 0THERMOMETER NO. 0006

CALIBRATION DUE DATE 2-6-90

[illegible]

ALL REQUIRED DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS APPROPRIATELY TRAINED AND TEST PROCEDURES FOLLOWED TO PRODUCE THE ABOVE DATA

TEST OPERATOR: *R.G. ALEXANDER*

DATE 11-30-89



Westinghouse  
Hanford Company

### CHAIN OF CUSTODY

Company Contact: JW Lindberg Telephone 6-5005

Sample Collected by: Lindberg/Consort/Miller Date: 11/9/89-11/20/89 Time: Variable

Sample Locations: MW-4 1100-EM-1 CERCLA

Ice Chest No.: N/A Field Logbook & Page No.: pages 1-6 WHC-N-306-3

Remarks: Sample MW-4-4 already sent for quick-turn-around sieve analysis for filter pack and well screen selection

Bill of Lading No.: N/A Off Site Property No.: N/A

Method of Shipment: Hand carry

Shipped to: Jerry Alexander, 2101-M Bldg, Physical Testing Lab

#### Sample Identification

MW-4-1 plastic bags

MW-4-2 plastic bags

MW-4-3 plastic bags

MW-4-5 plastic bags

MW-4-6 plastic bags

MW-4-7 plastic bags

#### CHAIN OF POSSESSION

Relinquished by: JW Lindberg

Received by: R.G. Alexander

Date/Time: 11/28/89 3:30

Relinquished by:

Received by:

Date/Time:

Relinquished by:

Received by:

Date/Time:

Relinquished by:

Received by:

Date/Time:

# SAMPLING ANALYSIS REQUEST

## Part I: Field Section

Collector Lindberg/Consort/Miller Date Sampled 11-9-89 Time Variable hours  
 Affiliation of Sampler WTC and Golder

Address \_\_\_\_\_  
 number street city state zip

Telephone ( ) 6-5005 Company Contact JW Lindberg

LABORATORY SAMPLE NUMBER	COLLECTOR'S SAMPLE NO.	TYPE OF SAMPLE*	FIELD INFORMATION**
	<u>MW-4-1</u>	<u>plastic bag</u>	<u>moisture and sieve/Hydrom</u>
	<u>MW-4-2</u>	<u>" "</u>	<u>" " " "</u>
	<u>MW-4-3</u>	<u>" "</u>	<u>" " " "</u>
	<u>MW-4-5</u>	<u>" "</u>	<u>sieve/Hydrom Anal</u>

Analysis Requested Moisture Content, Sieve/Hydrometer Analysis as  
indicated in Field Info\*\* above right.

Special Handling and/or Storage \_\_\_\_\_

## PART II: LABORATORY SECTION\*\*

Received by R.G. Alexander Title Adv Eng Date 11-28-89

Analysis Required \_\_\_\_\_

\* Indicate whether sample is soil, sludge, etc.

\*\*Use back of page for additional information relative to sample location.

Figure 9-19. Example of hazardous waste sample analysis sheet.

# RADIATION RELEASE

Bldg. 1100 Area Date 11-09-89  
 Released By H.A. Bensch  
 Operational Health Physics  
 Remarks MW-4-1

54-3000-022 (09/88)

# RADIATION RELEASE

Bldg. 1100 Area Date 11-10-89  
 Released By J.M. Sweeney  
 Operational Health Physics  
 Remarks < D 1 sample

MW-4-2

54-3000-022 (09/88)

# RADIATION RELEASE

BLDG. 1100 Area DATE 11-15-89  
 RELEASED BY R. Bunch  
 RADIATION MONITORING  
 REMARKS: MW-4-3

54-3000-022 (5-57)

# RADIATION RELEASE

Bldg. MW-4 drilling site Date 11-21-89  
 Released By Rich Bumgarner  
 Operational Health Physics  
 Remarks < Than Detectable  
sample sent to the lab 11-20-89 MW-4  
Results: OK

MW-4-5

54-3000-022 (09/88)

# RADIATION RELEASE

Bldg. MW-4 drilling site Date 11-21-89  
 Released By Rich Bumgarner  
 Operational Health Physics  
 Remarks < Than detectable - sample (11-20)  
set to 100K lab results OK

MW-4-7

54-3000-022 (09/88)

# RADIATION RELEASE

BLDG. MW-6 DATE 11/18/89  
 RELEASED BY [Signature]  
 RADIATION MONITORING  
 REMARKS: MW-6-1

54-3000-022 (5-57)

# RADIATION RELEASE

BLDG. MW-6 DATE 11/14/89  
 RELEASED BY [Signature]  
 RADIATION MONITORING  
 REMARKS: MW-6-2

54-3000-022 (5-57)

# RADIATION RELEASE

Bldg. MW 6 drilling site Date 11-21-89  
 Released By C.D. Fehlyles  
 Operational Health Physics  
 Remarks < detectable sample # mwb-4  
(Two) mwb-5 (+) MW-6-4A

54-3000-022 (09/88)

# RADIATION RELEASE

Bldg. drilling MW 6 site Date 11-21-89  
 Released By C.D. Fehlyles  
 Operational Health Physics  
 Remarks < Detectable on sample #  
mwb-4

MW-6-4B

54-3000-022 (09/88)

# TEST REQUEST FORM

Sample/Specimen No. 9-060 Cost Code/Work Order No. ED 332

Requested By: Org. 80232 Person J. LINDBERG Date 11-29-89

Test Requested	No. of Samples	Test Lab Information (Instruction Used)
<u>MOISTURE</u>	<u>1</u>	<u>ETAL-14</u>
<u>SIEVE ANALYSIS</u>	<u>1</u>	<u>ETAL-07</u>
<u>HYDROMETER</u>	<u>1</u>	<u>ETAL-09 (AS REQUIRED)</u>
<u>N/A</u>	<u>N/A</u>	<u>N/A</u>

Remarks FIELD SAMPLE  
MW-4-3

Received By: R.G. ALEXANDER Date 11-28-89

Approved By: R.G. ALEXANDER Date 11-29-89

# SIEVE ANALYSIS DATA SHEET

Sample ID 9-060

Page 1 of 1

Tested By R. G. ALEXANDER

Date 11-30-89

Procedure ETAL-07 Rev 0

Date Issued 11-15-89

EQUIPMENT ITEM	CALIBRATION NO.	DATE DUE
Balance	<u>3304</u>	<u>12-28-89</u>
Thermometer	<u>0006</u>	<u>2-6-90</u>
<u>N/A</u>	<u>N/A</u>	<u>N/A</u>

Sample Description SANDY GRAVEL

Sieve Time 10 (min)

reduced by ☒ splitting

☒ quartering

☐ stockpile

(B) BEFORE TEST WT. N/A (A) AFTER TEST WT. N/A  $\frac{B-A}{B} \times 100 = \underline{N/A} \% \text{ LOSS}$

Sieve ID Number	Sieve Size	Sample Weight	Cumulative Wt. Retained (g)	% Retained	Cumulative % Retained	Cumulative % Pass	% Pass
<u>N/A</u>	<u>2"</u>	<u>5112.73</u>	<u>1270.87</u>	<u>24.9</u>	<u>24.9</u>	<u>75.1</u>	<u>75.1</u>
	<u>1 1/2</u>		<u>1610.89</u>	<u>31.5</u>	<u>31.5</u>	<u>68.5</u>	<u>68.5</u>
	<u>1</u>		<u>1734.22</u>	<u>33.9</u>	<u>33.9</u>	<u>66.1</u>	<u>66.1</u>
	<u>3/4</u>		<u>2003.53</u>	<u>39.2</u>	<u>39.2</u>	<u>60.8</u>	<u>60.8</u>
	<u>1/2</u>		<u>2353.21</u>	<u>46.0</u>	<u>46.0</u>	<u>54.0</u>	<u>54.0</u>
	<u>3/8</u>		<u>2539.90</u>	<u>49.7</u>	<u>49.7</u>	<u>50.3</u>	<u>50.3</u>
	<u>#4</u>		<u>2905.30</u>	<u>56.8</u>	<u>56.8</u>	<u>43.2</u>	<u>43.2</u>
	<u>#10</u>	<u>5112.73</u>	<u>3307.83</u>	<u>64.7</u>	<u>64.7</u>	<u>35.3</u>	<u>35.3</u>
	<u>#40</u>	<u>119.15</u>	<u>95.29</u>	<u>80.0</u>	<u>80.0</u>	<u>20.0</u>	<u>7.1</u>
	<u>#60</u>		<u>104.03</u>	<u>87.3</u>	<u>87.3</u>	<u>12.7</u>	<u>4.5</u>
<u>↓</u>	<u>#100</u>	<u>↓</u>	<u>108.28</u>	<u>90.9</u>	<u>90.9</u>	<u>9.1</u>	<u>3.2</u>
<u>N/A</u>	<u>#200</u>	<u>119.15</u>	<u>111.66</u>	<u>93.7</u>	<u>93.7</u>	<u>6.3</u>	<u>2.2</u>

Finess Modules (FM) N/A (See ASTM C 136-83, Section 8.2)

## MATERIALS FINER THAN NO. 200 SIEVE BY WASHING

C=Percentage of Material Passing a 200 Sieve N/A%

D=Original Dry Weight of Sample N/A g

E=Dry Weight of Sample After Drying N/A g

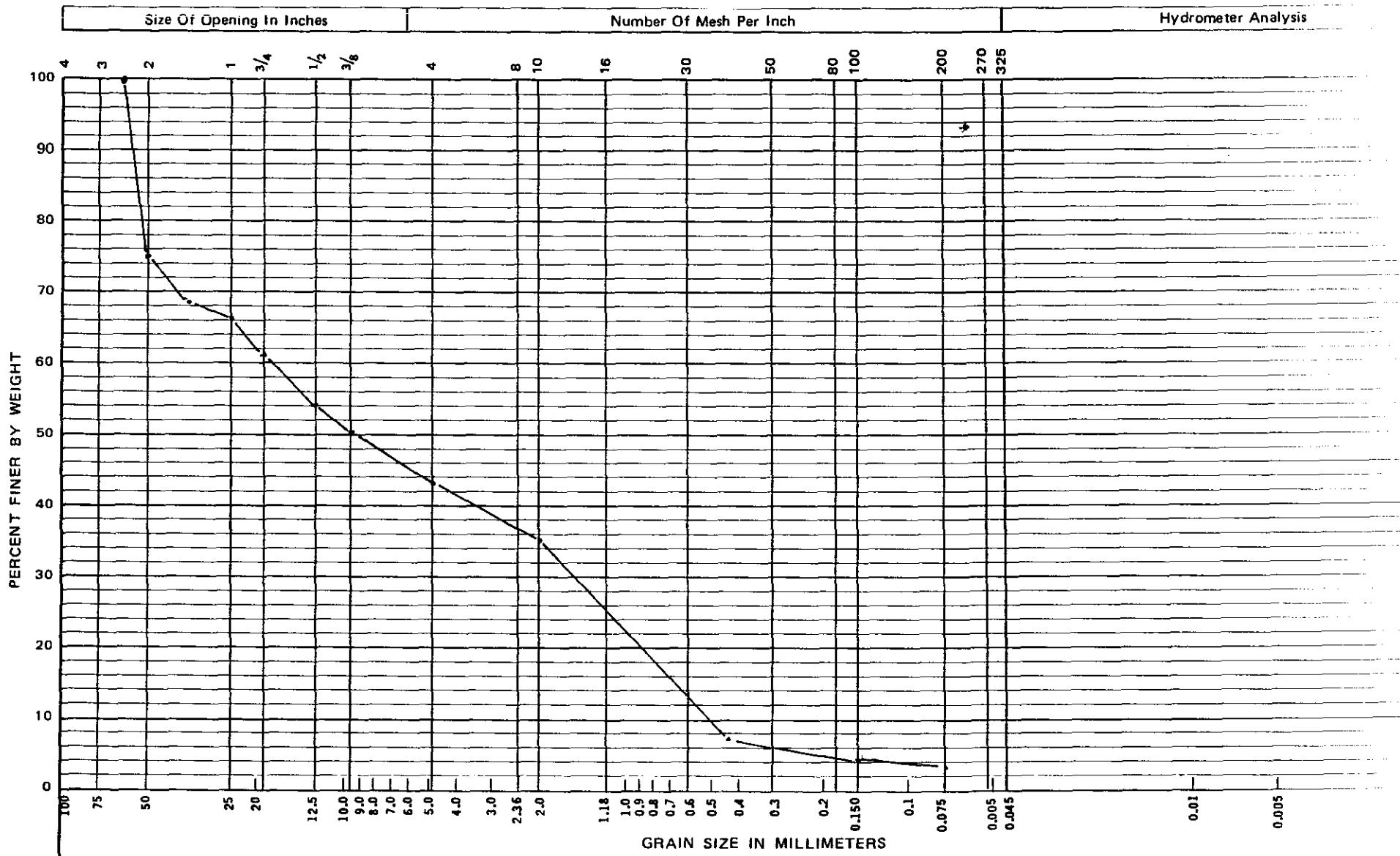
$$C = \frac{(D-E)}{D} \times 100$$

## Remarks

SAMPLE SLIGHTLY UNDER  
REC ASTM SIZE  
WASH FINE GRAINS

ALL DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS TRAINED AND USED CALIBRATED INSTRUMENTS  
Checked By C. J. Kemp Date 12-5-89

# GRAIN SIZE ANALYSIS PLOT



Specimen No. 9-060 Procedure No. ETAL-07 Rev. 0 Date Issued 11-15-89

Sample Description: SANDY GRAVEL  
MW-4-3

Plotted by: R.G. ALEXANDER  
Date: 11-30-89

Checked by: C.J. Kemp  
Date: 12-5-89

# SOIL MOISTURE DATA SHEET

PROCEDURE NO. ETAL-14

REV. NO. ØTHERMOMETER NO. 0006

CALIBRATION DUE DATE 2-6-90

[illegible]

ALL REQUIRED DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS APPROPRIATELY TRAINED AND TEST PROCEDURES FOLLOWED TO PRODUCE THE ABOVE DATA

TEST OPERATOR: R.G. ALEXANDER

DATE 11-30-89



Westinghouse  
Hanford Company

### CHAIN OF CUSTODY

Company Contact: JW Lindberg Telephone 6-5005

Sample Collected by: Lindberg/Consort/Miller Date: 11/9/89-11/20/89 Time: Variable

Sample Locations: MW-4 1100-EM-1 CERCLA

Ice Chest No.: N/A Field Logbook & Page No.: pages 1-6 WHC-N-306-3

Remarks: Sample MW-4-4 already sent for quick-turn-around sieve analysis for filter pack and well screen selection

Bill of Lading No.: N/A Off Site Property No.: N/A

Method of Shipment: Hand carry

Shipped to: Jerry Alexander, 2101-M Bldg, Physical Testing Lab

#### Sample Identification

MW-4-1 plastic bags  
MW-4-2 plastic bags  
MW-4-3 plastic bags  
MW-4-5 plastic bags  
MW-4-6 plastic bags  
MW-4-7 plastic bags

#### CHAIN OF POSSESSION

Relinquished by: JW Lindberg

Received by: R.G. Alexander

Date/Time:

11/28/89 3:30

Relinquished by:

Received by:

Date/Time:

Relinquished by:

Received by:

Date/Time:

Relinquished by:

Received by:

Date/Time:

# SAMPLING ANALYSIS REQUEST

## Part I: Field Section

Collector Lindberg/Consort/Miller Date Sampled 11-9-89 Time Variable hours  
 Affiliation of Sampler WHC and Golder

Address \_\_\_\_\_  
 number street city state zip

Telephone ( ) 6-5005 Company Contact JW Lindberg

LABORATORY SAMPLE NUMBER	COLLECTOR'S SAMPLE NO.	TYPE OF SAMPLE*	FIELD INFORMATION**
	<u>MW-4-1</u>	<u>plastic bag</u>	<u>moisture and Sieve/Hydrom</u>
	<u>MW-4-2</u>	<u>" "</u>	<u>" " " "</u>
	<u>MW-4-3</u>	<u>" "</u>	<u>" " " "</u>
	<u>MW-4-5</u>	<u>" "</u>	<u>Sieve/Hydrom Anal</u>

Analysis Requested Moisture Content, Sieve/Hydrometer Analysis as  
indicated in Field Info\*\* above right.

Special Handling and/or Storage \_\_\_\_\_

## PART II: LABORATORY SECTION\*\*

Received by R.G. Alexander Title Asst ENG Date 11-28-89

Analysis Required \_\_\_\_\_

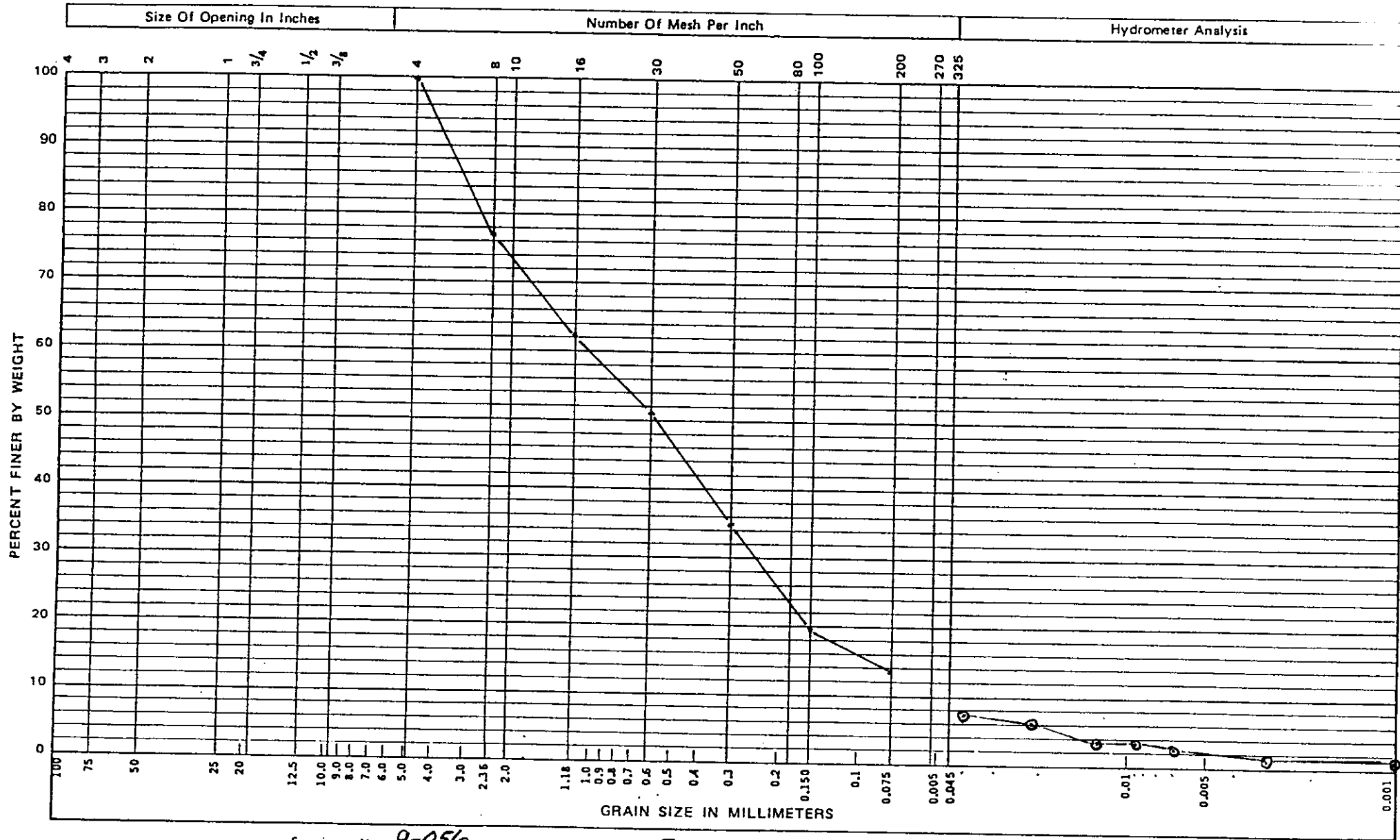
\* Indicate whether sample is soil, sludge, etc.

\*\*Use back of page for additional information relative to sample location.

Figure 9-19. Example of hazardous waste sample analysis sheet.

9 2 1 2 1 1 6 4

## GRAIN SIZE ANALYSIS PLOT

Specimen No. 9-056Procedure No. ETAL-07Rev. 0Date Issued 11-15-89

## Sample Description:

SANDY GRAVEL 30% = 0.25 mm  
 MW-4-4 +4 = 56.0%  
 WET SIEVE - #4 = 44.6%

Plotted by: R.G. ALEXANDERDate: 11-16-89Checked by: C.J. Kemp, L.D. BraggDate: 11-16-89 dlw/lw

# TEST REQUEST FORM

Sample/Specimen No. 9-056 Cost Code/Work Order No. ED 332

Requested By: Org. 80232 Person J. LINDBERG Date 11-16-89

Test Requested	No. of Samples	Test Lab Information (Instruction Used)
<u>SIEVE ANALYSIS</u>	<u>1</u>	<u>RUN WASH SIEVE</u>
<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
↓	↓	↓

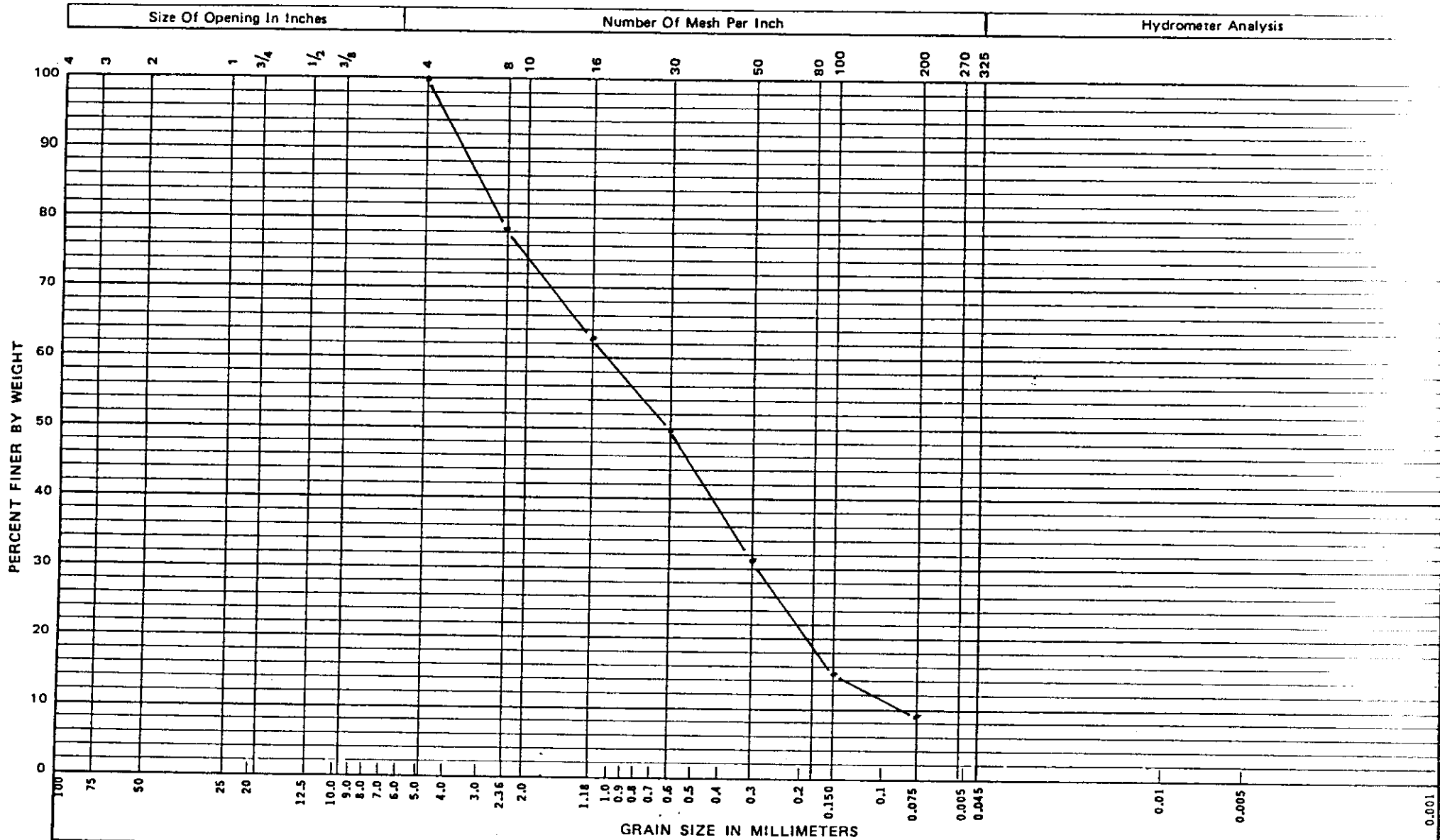
Remarks SAMPLE MW-4-4  
USE ETAL-07

Received By: R.G. ALEXANDER Date 11-16-89

Approved By: R.G. ALEXANDER Date 11-16-89

9 2 1 2 1 1 0 1 6 6

# GRAIN SIZE ANALYSIS PLOT



Specimen No. 9-056-1

Procedure No. ETAL-07

Rev. 0

Date Issued 11-15-89

## Sample Description:

SANDY GRAVEL 30% = 0.3 mm  
 MW-4-4 #4 = 56.0%  
 DRY SIEVE - 4 = 44.0%

Plotted by: R. G. ALEXANDER

Date: 11-16-89

Checked by: C. J. King

Date: 11-16-89

# SPECIFIC GRAVITY OF SOILS DATA SHEET

Specimen/Sample No. 9-056

Page 1 of 1

Test Operator R.G. ALEXANDER

EQUIPMENT ITEM	NO.	DATE DUE
Balance	<u>3304</u>	<u>6-25-90</u>
Oven Thermometer	<u>0007</u>	<u>8-16-90</u>
Thermometer	<u>0002</u>	<u>2-9-91</u>
Pycnometer	<u>2554</u>	<u>N/A</u>

Wetting Agent \_\_\_\_\_

DETERMINATION NO.		1	2	3
	Drying Container No.	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
	Wt. Container + Oven Dry Soil, ± 0.01g	<u>N/A</u>		
	Wt. Container, ± 0.01g	<u>N/A</u>		
$W_o$	Wt. Oven Dry Soil, g	<u>40.00</u>		
	Pycnometer No.	<u>2554</u>		
	Wt. Pycnometer, g	<u>135.22</u>		
$W_a$	Wt. Pycnometer + Wetting Agent, g	<u>387.09</u>		
$W_b$	Wt. Pycnometer + Wetting Agent + Soil, g	<u>412.43</u>		
	Temperature, $T_x$ at $W_b$ , °C	<u>25.1</u>		
$G_w$	Specific Gravity of Wetting Agent at $T_x$	<u>1.00</u>		
$G_t$	Specific Gravity of Soil at $T_x$	<u>2.73</u>		
$G_s$	Specific Gravity of Soil at 20°C	<u>2.73</u>		

$$G_t = \frac{G_w \cdot Y_w \cdot W_o}{W_o + (W_a - W_b)}$$

$Y_w$  = Unit Weight Of Water (g/cc)

$$*G_s = K \cdot G_t$$

K values found in ASTM D854-58, Table 1

\*NOTE  $G_s = G_t$  When Test Run at 20 °c

Average Specific Gravity At 20°C

2.73

ALL REQUIRED DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS APPROPRIATELY TRAINED AND UTILIZED CALIBRATED TEST INSTRUMENTS AS INDICATED ABOVE. APPROVED TEST PROCEDURES WERE FOLLOWED TO PRODUCE THE ABOVE DATA.

Checked By L. R. Braggeman

Date 4/12/90

9212110162

# SIEVE ANALYSIS DATA SHEET

Sample ID 9-056

Page 1 of 1

Tested By R.G. ALEXANDER

Date 11-16-89

Procedure ETAL-07

Rev Ø

Date Issued 11-15-89

EQUIPMENT ITEM	CALIBRATION NO.	DATE DUE
Balance	<u>3304</u>	<u>12-28-89</u>
Thermometer	<u>0001</u>	<u>2-6-90</u>
<u>N/A</u>	<u>N/A</u>	<u>N/A</u>

Sample Description MW-4-4 SANDY GRAVEL Sieve Time 10 (min)

reduced by ☒ splitting ☒ quartering ☐ stockpile

(B) BEFORE TEST WT. 609.93 (A) AFTER TEST WT. N/A  $\frac{B-A}{B} \times 100 = \underline{N/A} \% \text{ LOSS}$

Sieve ID Number	Sieve Size	Sample Weight	Cumulative Wt. Retained (g)	% Retained	Cumulative % Retained	Cumulative % Pass	% Pass
<u>N/A</u>		<u>609.93</u>					
	<u>#4</u>		<u>Ø</u>	<u>Ø</u>	<u>Ø</u>	<u>100</u>	<u>100</u>
	<u>#8</u>		<u>140.21</u>	<u>23.0</u>	<u>23.0</u>	<u>77.0</u>	<u>77.0</u>
	<u>#16</u>		<u>230.66</u>	<u>37.8</u>	<u>37.8</u>	<u>62.2</u>	<u>62.2</u>
	<u>#30</u>		<u>299.05</u>	<u>49.0</u>	<u>49.0</u>	<u>51.0</u>	<u>51.0</u>
	<u>#50</u>		<u>397.06</u>	<u>65.1</u>	<u>65.1</u>	<u>34.9</u>	<u>34.9</u>
	<u>#100</u>		<u>490.68</u>	<u>80.4</u>	<u>80.4</u>	<u>19.6</u>	<u>19.6</u>
	<u>#200</u>		<u>526.14</u>	<u>86.3</u>	<u>86.3</u>	<u>13.7</u>	<u>13.7</u>
	<u>PAN</u>	<u>609.93</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>

Finess Modules (FM) N/A (See ASTM C 136-83, Section 8.2)

## MATERIALS FINER THAN NO. 200 SIEVE BY WASHING

C=Percentage of Material Passing a 200 Sieve N/A %

D=Original Dry Weight of Sample N/A g

E=Dry Weight of Sample After Drying N/A g

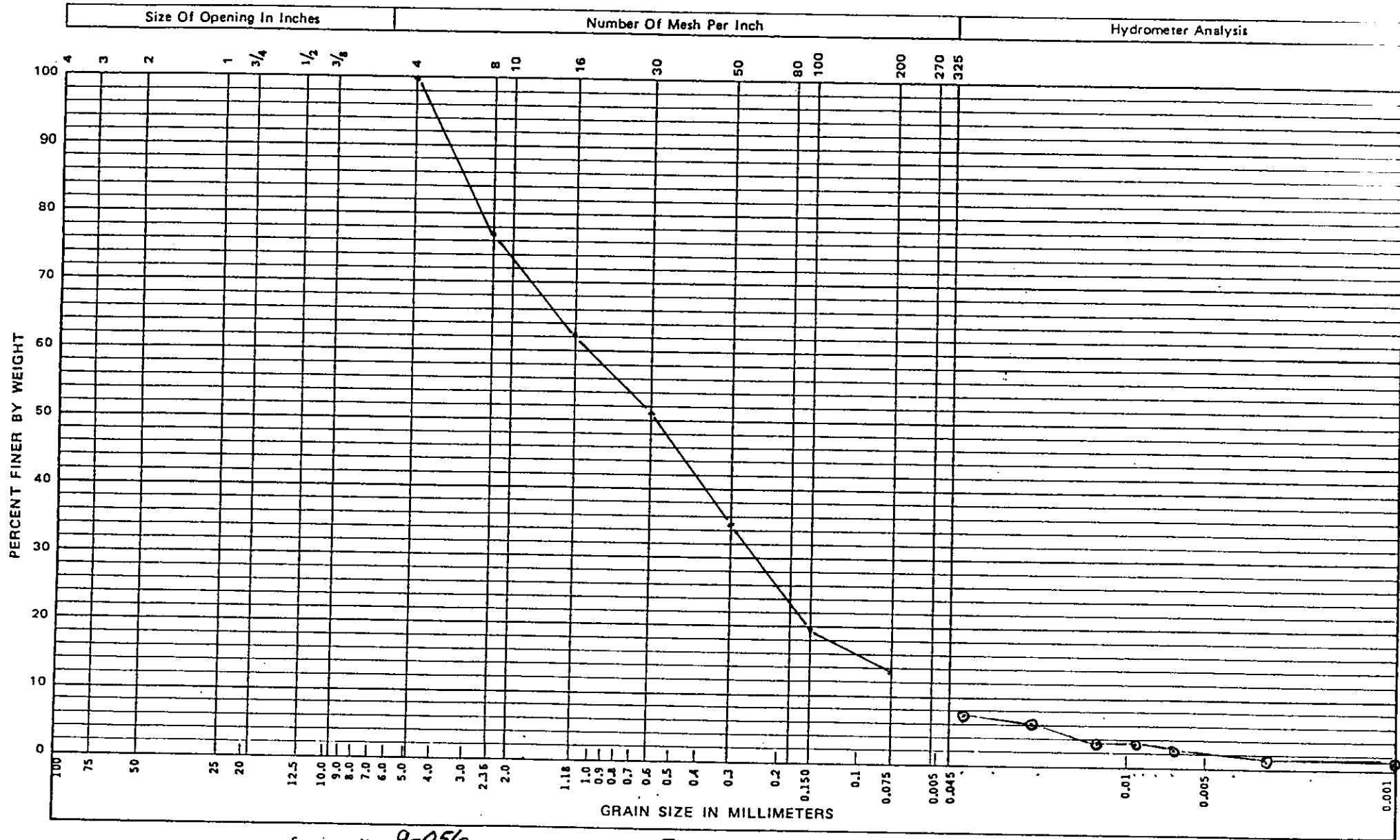
$$C = \frac{(D-E)}{D} \times 100$$

Remarks WASHED SIEVE  
QUARTER AND SPLIT  
FOR FINE GRAIN 609.93g  
WASH THRU #200 SIEVE  
F4 = 52%, F4 = 44%

ALL DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS TRAINED AND USED CALIBRATED INSTRUMENTS  
 Checked By C.J. Kemp Date 11-16-89

9 2 1 2 1 1 6 4

## GRAIN SIZE ANALYSIS PLOT

Specimen No. 9-056Procedure No. ETAL-07Rev. 0Date Issued 11-15-89

## Sample Description:

SANDY GRAVEL 30% = 0.25 mm  
 MW-4-4 +44 = 56.0%  
 WET SIEVE - 44 = 44.6%

Plotted by: R.G. ALEXANDERDate: 11-16-89Checked by: C.J. Kemp, L.D. BraggDate: 11-16-89 dlw/lw

# SIEVE ANALYSIS DATA SHEET

Sample ID 9-056-1

Page 1 of 1

Tested By R. G. ALEXANDER

Date 11-16-89

Procedure ETAL-07

Rev 0

Date Issued 11-15-89

EQUIPMENT ITEM

CALIBRATION NO.

DATE DUE

Balance

3304

12-28-89

Thermometer

0001

2-6-90

N/A

N/A

N/A

Sample Description MW-4-4 SANDY GRAVEL

Sieve Time 10 (min)

reduced by ☒ splitting

☒ quartering

☐ stockpile

(B)

(A)

BEFORE TEST WT. 545.22 AFTER TEST WT. 544.79  $\frac{B-A}{B} \times 100 = .08$  % LOSS

Sieve ID Number	Sieve Size	Sample Weight	Cumulative Wt. Retained (g)	% Retained	Cumulative % Retained	Cumulative % Pass	% Pass
<u>N/A</u>	<u>N/A</u>	<u>545.22</u>	<u>N/A</u>				
	<u>#4</u>		<u>0</u>	<u>0</u>	<u>0</u>	<u>100</u>	<u>100</u>
	<u>#8</u>		<u>118.50</u>	<u>21.7</u>	<u>21.7</u>	<u>78.3</u>	<u>78.3</u>
	<u>#16</u>		<u>203.09</u>	<u>37.2</u>	<u>37.2</u>	<u>62.8</u>	<u>62.8</u>
	<u>#30</u>		<u>273.86</u>	<u>50.2</u>	<u>50.2</u>	<u>49.8</u>	<u>49.8</u>
	<u>#50</u>		<u>375.20</u>	<u>68.8</u>	<u>68.8</u>	<u>31.2</u>	<u>31.2</u>
	<u>#100</u>		<u>463.81</u>	<u>85.1</u>	<u>85.1</u>	<u>14.9</u>	<u>14.9</u>
	<u>#200</u>		<u>497.48</u>	<u>91.2</u>	<u>91.2</u>	<u>8.8</u>	<u>8.8</u>
<u>Y</u>	<u>FAN</u>	<u>545.22</u>	<u>544.79</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>

Finess Modules (FM) N/A (See ASTM C 136-83, Section 8.2)

## MATERIALS FINER THAN NO. 200 SIEVE BY WASHING

C=Percentage of Material Passing a 200 Sieve N/A %

D=Original Dry Weight of Sample N/A g

E=Dry Weight of Sample After Drying N/A g

$C = \frac{D-E}{D} \times 100$

Remarks DRY SIEVE

QUARTER SAMPLE

SPLIT FINES TO 545.22g

% PASS #4 = 44.0

% RET #4 = 56.0

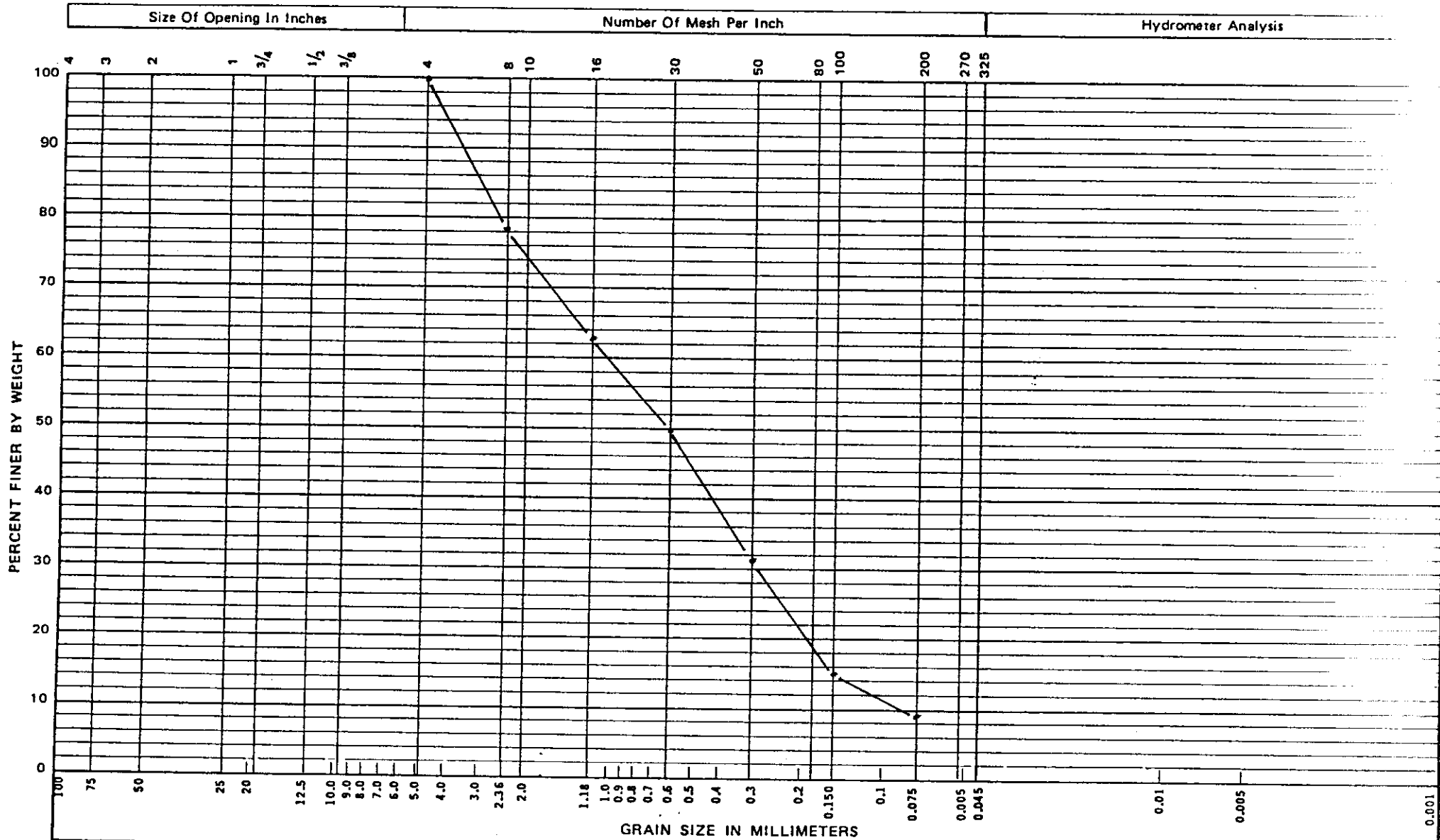
ALL DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS TRAINED AND USED CALIBRATED INSTRUMENTS

Checked By C. J. King

Date 11-16-89

9 2 1 2 1 1 0 1 6 6

# GRAIN SIZE ANALYSIS PLOT



Specimen No. 9-056-1

Procedure No. ETAL-07

Rev. 0

Date Issued 11-15-89

## Sample Description:

SANDY GRAVEL 30% = 0.3 mm  
 MW-4-4 #4 = 56.0%  
 DRY SIEVE - 4 = 44.0%

Plotted by: R. G. ALEXANDER

Date: 11-16-89

Checked by: C. J. King

Date: 11-16-89



Westinghouse  
Hanford Company

CHAIN OF CUSTODY

Company Contact: Jon Lindberg Telephone: 6-5005  
Sample Collected by: Russell Vance/Rand Miller Date: 11/15/89 Time: 11:35  
Sample Locations: 1100-2 Pit, southeast side MW-4 WHL-N-306-3  
Ice Chest No.: N/A Field Logbook Page No.: 14  
Remarks: Sieve Analysis of #4 minus material (Wet Sieve)  
and Record gravel (+ #4) and report also.  
Method of Shipment: Hand carry

Sample Identification

MW-4-4, in plastic bag

RADIATION RELEASE

BLDG. 1100-Area DATE 11-15-89

RELEASED BY [Signature]

RADIATION MONITORING

REMARKS: MW-4-4

64-3000-022 (6-67)

CHAIN OF POSSESSION

Relinquished by: Rand Miller

Received by: Jon Lindberg

Date/Time: 11/15/89 3:30pm

Relinquished by: Jon Lindberg

Received by: R.G. Alexander

Date/Time: 11/16/89 0600

Relinquished by: \_\_\_\_\_

Received by: \_\_\_\_\_

Date/Time: \_\_\_\_\_

Relinquished by: \_\_\_\_\_

Received by: \_\_\_\_\_

Date/Time: \_\_\_\_\_

9212110167

# TEST REQUEST FORM

Sample/Specimen No. 9-061 Cost Code/Work Order No. ED 332

Requested By: Org. 80232 Person J. LINDBERG Date 11-29-89

Test Requested	No. of Samples	Test Lab Information (Instruction Used)
<u>MOISTURE</u>	<u>1</u>	<u>ETAL-14</u>
<u>SIEVE ANALYSIS</u>	<u>1</u>	<u>ETAL-07</u>
<u>HYDROMETER</u>	<u>1</u>	<u>ETAL-07 (AS REQUIRED)</u>
<u>N/A</u>	<u>N/A</u>	<u>N/A</u>

Remarks FIELD SAMPLE  
MW-4-5

Received By: R.G. ALEXANDER Date 11-28-89

Approved By: R.G. ALEXANDER Date 11-29-89

9212110163

# SIEVE ANALYSIS DATA SHEET

Sample ID 9-061

Page 1 of 1

Tested By R.G. ALEXANDER

Date 12-4-89

Procedure ETAL-07

Rev 0

Date Issued 11-15-89

EQUIPMENT ITEM

CALIBRATION NO.

DATE DUE

Balance

3304

12-28-89

Thermometer

0066

2-6-90

N/A

N/A

N/A

Sample Description SANDY GRAVEL

Sieve Time 10 (min)

reduced by ☒ splitting

☒ quartering

☐ stockpile

(B)

(A)

BEFORE TEST WT. N/A AFTER TEST WT. N/A  $\frac{B-A}{B} \times 100 = \underline{N/A} \% \text{ LOSS}$

Sieve ID Number	Sieve Size	Sample Weight	Cumulative Wt. Retained (g)	% Retained	Cumulative % Retained	Cumulative % Pass	% Pass
<u>N/A</u>	<u>2</u>	<u>4981.02</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>100</u>	<u>100</u>
	<u>1 1/2</u>		<u>306.77</u>	<u>6.2</u>	<u>6.2</u>	<u>93.8</u>	<u>93.8</u>
	<u>1</u>		<u>621.83</u>	<u>12.5</u>	<u>12.5</u>	<u>87.5</u>	<u>87.5</u>
	<u>3/4</u>		<u>1014.05</u>	<u>20.4</u>	<u>20.4</u>	<u>79.6</u>	<u>79.6</u>
	<u>1/2</u>		<u>1366.34</u>	<u>27.4</u>	<u>27.4</u>	<u>72.6</u>	<u>72.6</u>
	<u>3/8</u>		<u>1611.96</u>	<u>32.4</u>	<u>32.4</u>	<u>67.6</u>	<u>67.6</u>
	<u>#4</u>		<u>2092.85</u>	<u>42.0</u>	<u>42.0</u>	<u>58.0</u>	<u>58.0</u>
	<u>#10</u>	<u>4981.02</u>	<u>2484.74</u>	<u>49.9</u>	<u>49.9</u>	<u>50.1</u>	<u>50.1</u>
	<u>#40</u>	<u>122.22</u>	<u>88.60</u>	<u>72.5</u>	<u>72.5</u>	<u>27.5</u>	<u>13.8</u>
	<u>#60</u>		<u>100.03</u>	<u>81.8</u>	<u>81.8</u>	<u>18.2</u>	<u>9.1</u>
	<u>#100</u>		<u>107.77</u>	<u>88.2</u>	<u>88.2</u>	<u>11.8</u>	<u>5.9</u>
<u>N/A</u>	<u>#200</u>	<u>122.22</u>	<u>112.59</u>	<u>92.1</u>	<u>92.1</u>	<u>7.9</u>	<u>4.0</u>

Finess Modules (FM) N/A (See ASTM C 136-83, Section 8.2)

## MATERIALS FINER THAN NO. 200 SIEVE BY WASHING

C=Percentage of Material Passing a 200 Sieve N/A%

D=Original Dry Weight of Sample

N/A g

E=Dry Weight of Sample After Drying

N/A g

$C = \frac{(D-E)}{D} \times 100$

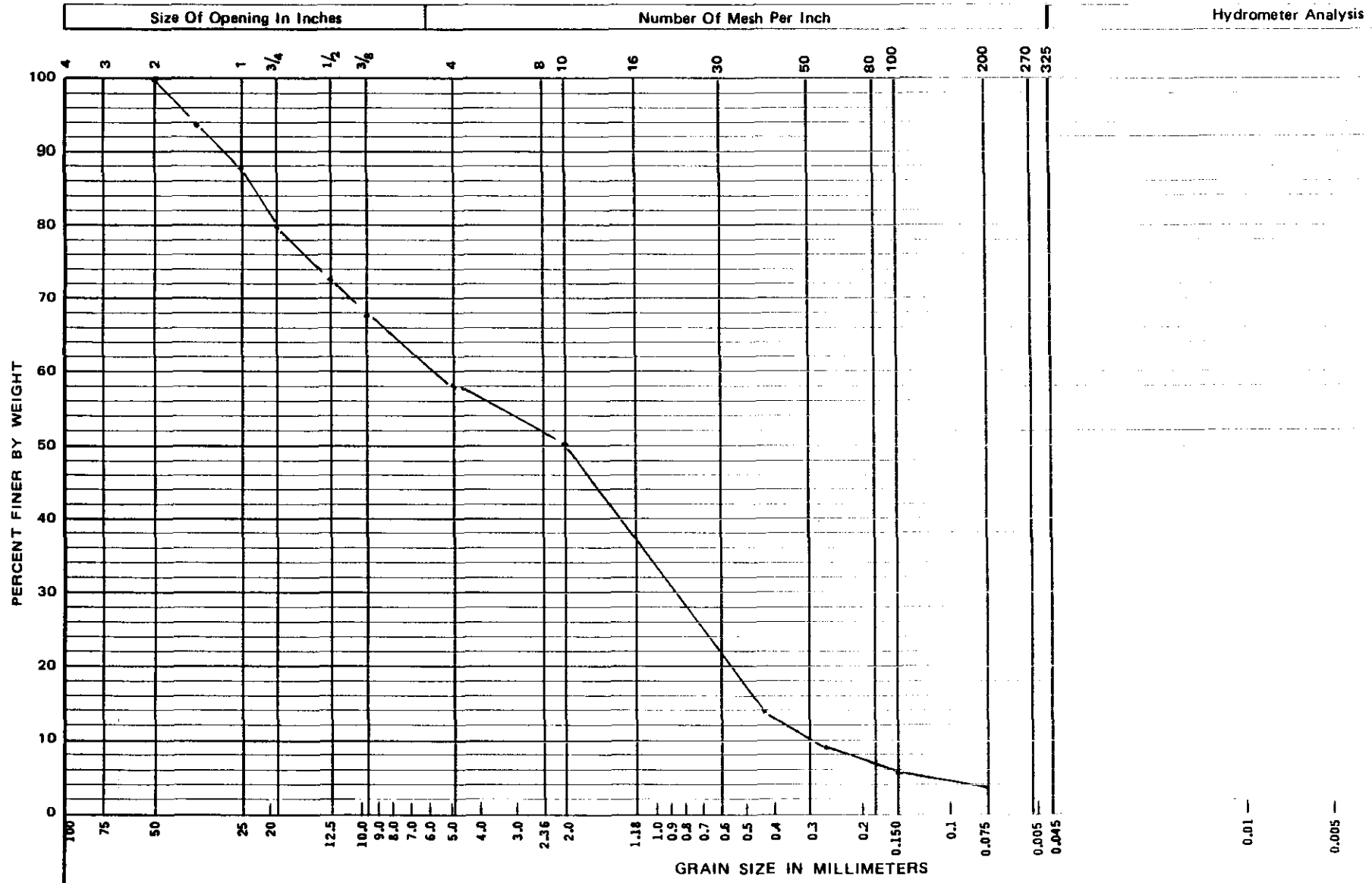
Remarks

WASH FINE GRADING

ALL DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS TRAINED AND USED CALIBRATED INSTRUMENTS  
Checked By C. J. Kemp Date 12-5-89

9 2 1 2 0 1 7 0

## GRAIN SIZE ANALYSIS PLOT

Specimen No. 9-061Procedure No. ETAL-07Rev. 0Date Issued 11-15-89

Sample Description:

SANDY GRAVEL  
MW-4-5Plotted by: R.G. ALEXANDERDate: 12-4-89Checked by: C.J. KempDate: 12-5-89

SOIL MOISTURE DATA SHEET	
PROCEDURE NO. <u>ETAL-14</u>	REV. NO. <u>Ø</u>
THERMOMETER NO. <u>0006</u>	CALIBRATION DUE DATE <u>2-6-90</u>

REV. NO. 0

CALIBRATION DUE DATE 2-6-90

[illegible]

ALL REQUIRED DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS APPROPRIATELY TRAINED AND TEST PROCEDURES FOLLOWED TO PRODUCE THE ABOVE DATA

R.G. ALEXANDER

DATE 12-4-89

9212171



Westinghouse  
Hanford Company

### CHAIN OF CUSTODY

Company Contact: JW Lindberg Telephone 6-5005

Sample Collected by: Lindberg/Consort/Miller Date: 11/9/89-11/20/89 Time: Variable

Sample Locations: MW-4 1100-EM-1 CERCLA

Ice Chest No.: N/A Field Logbook & Page No.: pages 1-6 WHC-N-306-3

Remarks: <sup>Sample</sup> MW-4-4 already sent for quick-turn-around sieve analysis for filter pack and well screen selection

Bill of Lading No.: N/A Off Site Property No.: N/A

Method of Shipment: Hand carry

Shipped to: Jerry Alexander, 2101-M Bldg, Physical Testing Lab

#### Sample Identification

MW-4-1 plastic bags  
MW-4-2 plastic bags  
MW-4-3 plastic bags  
MW-4-5 plastic bags  
MW-4-6 plastic bags  
MW-4-7 plastic bags

#### CHAIN OF POSSESSION

Relinquished by: JW Lindberg

Received by: R.G. Alexander

Date/Time: 11/28/89 3:30

Relinquished by: \_\_\_\_\_

Received by: \_\_\_\_\_

Date/Time: \_\_\_\_\_

Relinquished by: \_\_\_\_\_

Received by: \_\_\_\_\_

Date/Time: \_\_\_\_\_

Relinquished by: \_\_\_\_\_

Received by: \_\_\_\_\_

Date/Time: \_\_\_\_\_

9212110172

# SAMPLING ANALYSIS REQUEST

## Part I: Field Section

Collector Lindberg/Consort/Miller Date Sampled 11-9-89 Time Variable hours  
11-16-89

Affiliation of Sampler WHC and Golder

Address \_\_\_\_\_  
 number street city state zip

Telephone ( ) 6-5005 Company Contact JW Lindberg

LABORATORY  
SAMPLE  
NUMBER

COLLECTOR'S  
SAMPLE NO.

TYPE OF  
SAMPLE\*

FIELD INFORMATION\*\*

	<u>MW-4-1</u>	<u>plastic bag</u>	<u>moisture and sieve/Hydrom</u>			
	<u>MW-4-2</u>	<u>" "</u>	<u>"</u>	<u>"</u>	<u>"</u>	<u>"</u>
	<u>MW-4-3</u>	<u>" "</u>	<u>"</u>	<u>"</u>	<u>"</u>	<u>"</u>
	<u>MW-4-5</u>	<u>" "</u>	<u>sieve/Hydrom Anal</u>			

Analysis Requested Moisture Content, Sieve/Hydrometer Analysis as  
indicated in Field Info\*\* above right.

Special Handling and/or Storage \_\_\_\_\_

## PART II: LABORATORY SECTION\*\*

Received by R.G. Alexander Title ADV ENG Date 11-28-89

Analysis Required \_\_\_\_\_

\* Indicate whether sample is soil, sludge, etc.

\*\*Use back of page for additional information relative to sample location.

Figure 9-19. Example of hazardous waste sample analysis sheet.

# RADIATION RELEASE

Bldg. 1100 Area Date 11-09-89

Released By H.A. Beal  
Operational Health Physics

Remarks MW-4-1

54-3000-022 (09/88)

# RADIATION RELEASE

Bldg. 1100 Area Date 11-10-89

Released By J.M. Sweeney  
Operational Health Physics

Remarks < D 1 sample  
MW-4-2

54-3000-022 (09/88)

# RADIATION RELEASE

BLDG. 1100-Area DATE 11-15-89

RELEASED BY R. Brown  
RADIATION MONITORING

REMARKS: MW-4-3

54-3000-022 (8-87)

# RADIATION RELEASE

Bldg. MW-4 drilling site Date 11-21-89

Released By Rich Bumgarner  
Operational Health Physics

Remarks < Than Detectable  
sample sent to the lab 11-20-89 MW-4  
results: OK MW-4-5

54-3000-022 (09/88)

# RADIATION RELEASE

Bldg. MW-4 drilling site Date 11-21-89

Released By Rich Bumgarner  
Operational Health Physics

Remarks < Than detectable - sample (11-2)  
set to look lab. results OK

MW-4-7

54-3000-022 (09/88)

# RADIATION RELEASE

BLDG. MW-6 DATE 11/15/89

RELEASED BY B. Brown  
RADIATION MONITORING

REMARKS: MW-6-1

54-3000-022 (5-87)

# RADIATION RELEASE

BLDG. MW-6 DATE 11/14/89

RELEASED BY B. Brown  
RADIATION MONITORING

REMARKS: MW-6-2

54-3000-022 (5-87)

# RADIATION RELEASE

Bldg. MW-6 drilling site Date 11-21-89

Released By C.D. Fehlyles  
Operational Health Physics

Remarks < detectable sample # MW-6-4  
(Two) MW-6-5 (+) MW-6-4A

54-3000-022 (09/88)

# RADIATION RELEASE

Bldg. drilling MW-6 site Date 11-21-89

Released By C.D. Fehlyles  
Operational Health Physics

Remarks < Detectable on sample #  
MW-6-4

MW-6-4B

54-3000-022 (09/88)

92120174

# TEST REQUEST FORM

Sample/Specimen No. 9-063 Cost Code/Work Order No. ED332

Requested By: Org. 80232 Person J. LINDBERG Date 12-4-89

Test Requested	No. of Samples	Test Lab Information (Instruction Used)
<u>SIEVE ANALYSIS</u>	<u>1</u>	<u>ETAL-07</u>
<u>HYDROMETER</u>	<u>1</u>	<u>ETAL-07 (IF REQUIRED)</u>
<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
<u>N/A</u>	<u>N/A</u>	<u>N/A</u>

Remarks FIELD SAMPLE  
MW-47

Received By: R.G. ALEXANDER Date 11-28-89

Approved By: R.G. ALEXANDER Date 12-4-89

9212110175

# SIEVE ANALYSIS DATA SHEET

Sample ID 9-063

Page 1 of 1

Tested By R.G. ALEXANDER

Date 12-4-89

Procedure ETAL-07

Rev 0

Date Issued 11-15-89

EQUIPMENT ITEM

CALIBRATION NO.

DATE DUE

Balance

3304

12-28-89

Thermometer

0006

2-6-90

N/A

N/A

N/A

Sample Description SANDY GRAVEL

Sieve Time 10 (min)

reduced by ☒ splitting

☒ quartering

☐ stockpile

(B)

(A)

BEFORE TEST WT. N/A AFTER TEST WT. N/A  $\frac{B-A}{B} \times 100 = \underline{N/A} \% \text{ LOSS}$

Sieve ID Number	Sieve Size	Sample Weight	Cumulative Wt. Retained (g)	% Retained	Cumulative % Retained	Cumulative % Pass	% Pass
<u>N/A</u>	<u>2</u>	<u>4431.76</u>	<u>305.67</u>	<u>6.9</u>	<u>6.9</u>	<u>93.1</u>	<u>93.1</u>
	<u>1 1/2</u>		<u>447.29</u>	<u>10.1</u>	<u>10.1</u>	<u>89.9</u>	<u>89.9</u>
	<u>1</u>		<u>800.72</u>	<u>18.1</u>	<u>18.1</u>	<u>81.9</u>	<u>81.9</u>
	<u>3/4</u>		<u>1015.55</u>	<u>22.9</u>	<u>22.9</u>	<u>77.1</u>	<u>77.1</u>
	<u>1/2</u>		<u>1229.44</u>	<u>27.7</u>	<u>27.7</u>	<u>72.3</u>	<u>72.3</u>
	<u>3/8</u>		<u>1334.10</u>	<u>30.1</u>	<u>30.1</u>	<u>69.9</u>	<u>69.9</u>
	<u>#4</u>		<u>1572.45</u>	<u>35.5</u>	<u>35.5</u>	<u>64.5</u>	<u>64.5</u>
	<u>#10</u>	<u>4431.76</u>	<u>1854.43</u>	<u>41.8</u>	<u>41.8</u>	<u>58.2</u>	<u>58.2</u>
	<u>#40</u>	<u>194.14</u>	<u>23.96</u>	<u>12.3</u>	<u>12.3</u>	<u>87.7</u>	<u>51.0</u>
	<u>#60</u>		<u>121.36</u>	<u>62.5</u>	<u>62.5</u>	<u>37.5</u>	<u>21.8</u>
	<u>#100</u>		<u>168.47</u>	<u>86.8</u>	<u>86.8</u>	<u>13.2</u>	<u>7.7</u>
	<u>#200</u>		<u>179.34</u>	<u>92.4</u>	<u>92.4</u>	<u>7.6</u>	<u>4.4</u>

Finess Modules (FM) N/A (See ASTM C 136-83, Section 8.2)

## MATERIALS FINER THAN NO. 200 SIEVE BY WASHING

C=Percentage of Material Passing a 200 Sieve N/A %

D=Original Dry Weight of Sample N/A g

E=Dry Weight of Sample After Drying N/A g

$C = \frac{D-E}{D} \times 100$

Remarks

WASH FINE GRADING

ALL DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS TRAINED AND USED CALIBRATED INSTRUMENTS

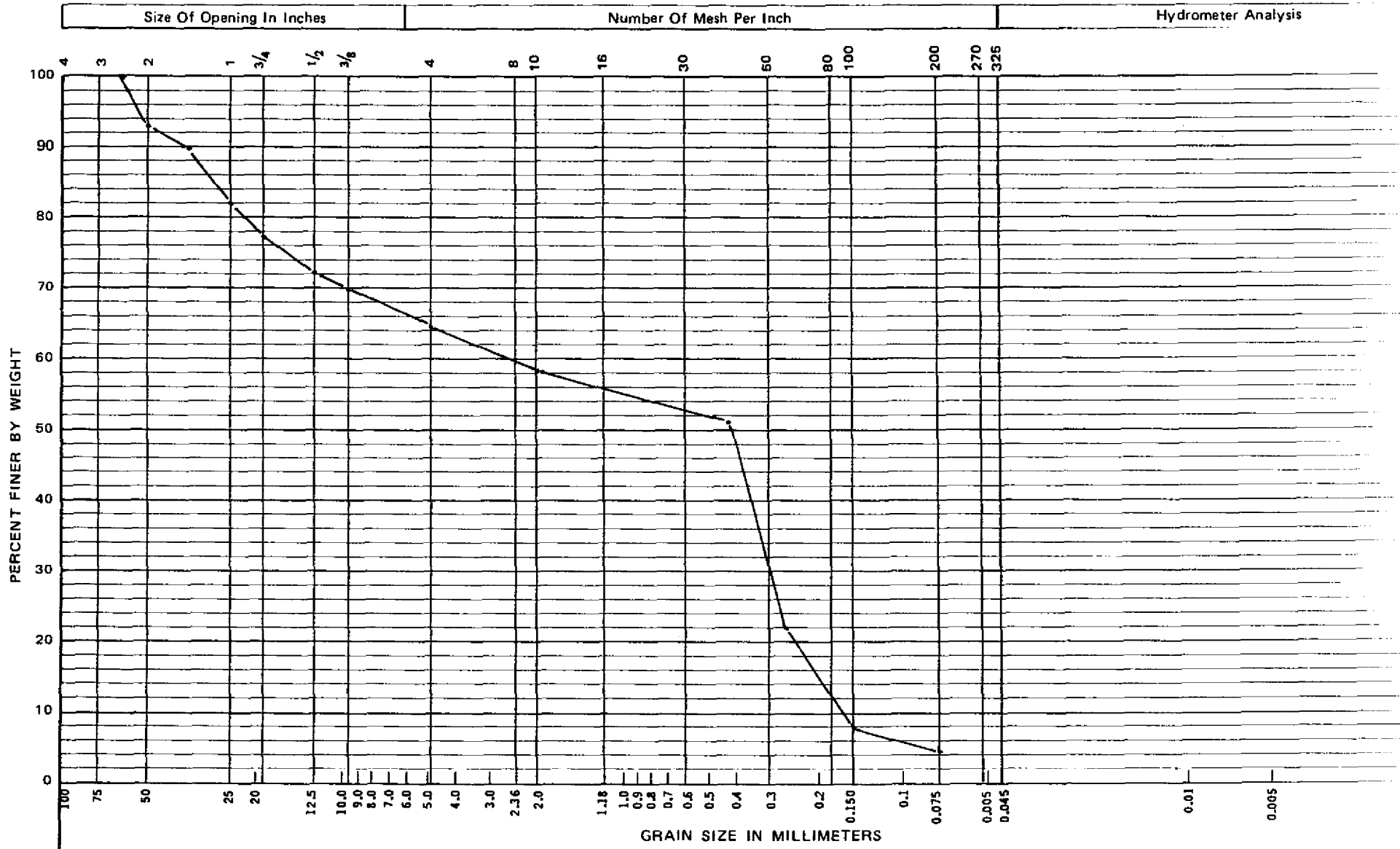
Checked By C.J. Kamp

Date 12-5-89

9212110176

9 2 1 2 1 1 1 1 7 7

# GRAIN SIZE ANALYSIS PLOT



Specimen No. 9-063

Procedure No. ETAL-07

Rev. Ø

Date Issued 11-15-89

Sample Description:

SANDY GRAVEL  
MW-4-7

Plotted by: R.G. ALEXANDER

Date: 12-5-89

Checked by: C.J. King

Date: 12-5-89

9212173

REV. NO. 0

CALIBRATION DUE DATE 2-6-90

ALL REQUIRED DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS APPROPRIATELY TRAINED AND TEST PROCEDURES FOLLOWED TO PRODUCE THE ABOVE DATA

TEST OPERATOR: *RG ALEXANDER* DATE *12-4-89*

ALL REQUIRED DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS APPROPRIATELY TRAINED AND TEST PROCEDURES FOLLOWED TO PRODUCE THE ABOVE DATA

TEST OPERATOR: R. G. ALEXANDER

DATE 12-4-89



Westinghouse  
Hanford Company

CHAIN OF CUSTODY

Company Contact: JW Lindberg Telephone 6-5005

Sample Collected by: Lindberg/Consort/Miller Date: 11/9/89-11/20/89 Time: Variable

Sample Locations: MW-4 1100-EM-1 CERCLA

Ice Chest No.: N/A Field Logbook & Page No.: pages 1-6 WHC-N-306-3

Remarks: Sample MW-4-4 already sent for quick-turn-around sieve analysis for filter pack and well screen selection

Bill of Lading No.: N/A Off Site Property No.: N/A

Method of Shipment: Hand carry

Shipped to: Jerry Alexander, 2101-M Bldg, Physical Testing Lab

Sample Identification

<u>MW-4-1 plastic bags</u>	
<u>MW-4-2 plastic bags</u>	
<u>MW-4-3 plastic bags</u>	
<u>MW-4-5 plastic bags</u>	
<u>MW-4-6 plastic bags</u>	
<u>MW-4-7 plastic bags</u>	

CHAIN OF POSSESSION

Relinquished by: JW Lindberg  
JW Lindberg

Received by: R.G. Alexander  
R.G. Alexander

Date/Time: 11/28/89 3:30

Relinquished by: \_\_\_\_\_

Received by: \_\_\_\_\_

Date/Time: \_\_\_\_\_

Relinquished by: \_\_\_\_\_

Received by: \_\_\_\_\_

Date/Time: \_\_\_\_\_

Relinquished by: \_\_\_\_\_

Received by: \_\_\_\_\_

Date/Time: \_\_\_\_\_

9212110179

# SAMPLING ANALYSIS REQUEST

## Part I: Field Section

Collector Miller/Singleton Date Sampled 11-13-89 Time Variable hours

Affiliation of Sampler WHC and Golder Assoc.

Address \_\_\_\_\_  
number street city state zip

Telephone ( ) 6-5005 Company Contact JW Lindberg

## LABORATORY SAMPLE NUMBER

## COLLECTOR'S SAMPLE NO.

## TYPE OF SAMPLE\*

## FIELD INFORMATION\*\*

	<u>MW-4-6</u>	<u>plastic bag</u>	<u>sieve/Hydrom.</u>
	<u>MW-4-7</u>	<u>" "</u>	<u>sieve/Hydrom.</u>
	<u>MW-6-1</u>	<u>" "</u>	<u>sieve/Hydrom &amp; Moisture</u>
	<u>MW-6-2</u>	<u>" "</u>	<u>Sieve Anal &amp;/or Hydrom</u>

Analysis Requested Moisture Content, Sieve Analysis/Hydrometer as indicated in Field Info\*\* above right

Special Handling and/or Storage \_\_\_\_\_

## PART II: LABORATORY SECTION\*\*

Received by \_\_\_\_\_ Title \_\_\_\_\_ Date \_\_\_\_\_

Analysis Required \_\_\_\_\_

\* Indicate whether sample is soil, sludge, etc.

\*\*Use back of page for additional information relative to sample location.

Figure 9-19. Example of hazardous waste sample analysis sheet.

9212110130

# RADIATION RELEASE

Bldg. 1100 Area Date 11-09-89  
 Released By H. A. Bensch  
 Operational Health Physics  
 Remarks MW-4-1  
 54-3000-022 (09/88)

# RADIATION RELEASE

Bldg. 1100 Area Date 11-10-89  
 Released By J. M. [Signature]  
 Operational Health Physics  
 Remarks < D [Signature]  
MW-4-2  
 54-3000-022 (09/88)

# RADIATION RELEASE

BLDG. 1100 Area DATE 11-15-89  
 RELEASED BY R. B. [Signature]  
 RADIATION MONITORING  
 REMARKS: MW-4-3  
 54-3000-022 (5-57)

# RADIATION RELEASE

Bldg. MW-4 drilling site Date 11-21-89  
 Released By Rich Bumgarner  
 Operational Health Physics  
 Remarks < Than Detectable  
Sample sent to the lab 11-20-89 MW-4  
Results OK  
MW-4-5  
 54-3000-022 (09/88)

# RADIATION RELEASE

Bldg. MW-4 drilling site Date 11-21-89  
 Released By Rich Bumgarner  
 Operational Health Physics  
 Remarks < Than detectable - sample 11-20  
sent to lab. results OK  
MW-4-7  
 54-3000-022 (09/88)

# RADIATION RELEASE

BLDG. MW-6 DATE 11/18/89  
 RELEASED BY [Signature]  
 RADIATION MONITORING  
 REMARKS: MW-6-1  
 54-3000-022 (5-57)

# RADIATION RELEASE

BLDG. MW-6 DATE 11/14/89  
 RELEASED BY [Signature]  
 RADIATION MONITORING  
 REMARKS: MW-6-2  
 54-3000-022 (5-57)

# RADIATION RELEASE

Bldg. MW-6 drilling site Date 11-21-89  
 Released By C. D. Fulbright  
 Operational Health Physics  
 Remarks < detectable sample # MW-6-4  
(Two) more samples (+) MW-6-4A  
 54-3000-022 (09/88)

# RADIATION RELEASE

Bldg. drilling site Date 11-21-89  
 Released By C. D. Fulbright  
 Operational Health Physics  
 Remarks < Detectable on sample #  
MW-6-4  
MW-6-4B  
 54-3000-022 (09/88)

921210131